Chapter 3

Field Artillery Tactics and Techniques

This chapter provides an overview of field artillery tactics and techniques in the offense and defense and a host of collateral and other associated operations. It is intended to be descriptive, not prescriptive, in nature and to complement FS equivalents in FM 6-20-30 and FM 6-20-60. As a primary contributor to combat power on the tactical and operational battlefields, FA operations must be synchronized with actions by the combined arms team at all levels. Therefore, artillerymen are expected to have a firm grasp of the principles governing maneuver operations as found in relevant Army capstone and applicable corps- and division-level manuals. For a detailed discussion of combined arms considerations refer to FM 100-5, *Operations*, FM 100-15, *Corps Operations*, and FM 71-100, *Division Operations*.

SECTION I - FA FIRES IN SUPPORT OF OFFENSIVE COMBAT OPERATIONS

GENERAL

3-1. The offense is the decisive form of war, massing overwhelming combat power at the point of attack while avoiding the enemy's main strength. Surprise, concentration, tempo, and audacity characterize offensive operations. The intent is to gain and maintain the initiative and to defeat, destroy, or neutralize the enemy.

3-2. The objective is to destroy the coherence of the enemy's defense, to fragment and isolate enemy units in the zone of attack, and to secure operationally decisive objectives. The preferred method is to find and attack the enemy at a distance with lethal and nonlethal fires while remaining outside the range of threat systems. Deep attacks precede and/or accompany offensive operations. Artillery fires, with delivery systems positioned well forward, are ideally suited to meet the characteristics of the offense. Such fires can be rapidly shifted and massed to strike the enemy with surprise from any direction at any time under any weather conditions.

EMPLOYMENT OF OFFENSIVE FA FIRES

GENERAL

3-3. FA fires must be responsive and timely in a rapidly moving and often uncertain situation to help achieve and sustain the initiative. FA provides friendly formations with a force multiplier to enhance force survivability, fix enemy forces, and secure flanks. Supporting FA elements should never be out of range of advancing maneuver formations. FA fires may also be used to neutralize and fix bypassed pockets of resistance until follow-on friendly forces can deal with them.

3-4. Initial priority of FA fires is established by the maneuver commander in coordination with the FSCOORD, based on prevailing METT-TC conditions. As operations progress, the priority for offensive FA fires may shift. For example, after firing preparations, priority of fires may shift to divisional cavalry squadrons, using quickfire channels with FA brigades for quick response. If a passage of lines is required, necessary arrangements and fire control measures must be preplanned.

DELIBERATE ATTACKS

3-5. Offensive FA fires may include intense and concentrated preparatory fires before and during the initial stages to weaken and create gaps in enemy defenses and to limit the enemy's ability to react to the attacking force. Planners must consider both the benefits and drawbacks of preparatory fires. Considerations include loss of surprise, ammunition expenditures, counterfire threats, and the number and significance of targets to be engaged.

3-6. Attacks should be supported with all available FA fires to assist fixing enemy forces away from the penetration and prevent or delay the arrival of enemy reinforcements. Scatterable mines (SCATMINEs) may be emplaced to delay and disrupt the enemy or serve as an immediate hasty obstacle against threats to the flanks. As maneuver forces cross the line of contact/line of departure (LC/LD) in an attack, accompanying artillery units must anticipate potential enemy actions and support the moving force with timely and accurate fires. In addition, offensive-covering forces should be assisted with supporting fires. Offensive FA fires are generally planned to:

- Ensure availability of immediate, responsive fires with initial priority to lead elements.
- Prevent decisive engagement or support decisive engagement when unavoidable.
- Assist in blocking enemy approaches and in terrain denial.
- Allow freedom of movement by using suppression, screening (smoke), and illumination fires. Potential targets include known or suspected enemy locations and likely engagement areas where contact is expected. In the absence of known, suspected, or likely enemy locations, targets are planned along the route of march.

3-7. During an actual attack, suppressive fires should isolate the objective of the main attack and help fix enemy forces during supporting attacks and deception operations. In addition, these fires:

- Soften the objective during attacks, exploitations, and pursuits and suppress the enemy to allow attacking formations to close with the enemy. As the objective is taken, focus GS/GSR artillery on targets away from the objective to interdict enemy reinforcements and escape routes and assist in destroying pockets of resistance. Also, use indirect FA fires during exploitations and pursuits to sustain friendly force forward momentum.
- Fire special artillery programs with FA units not in the immediate close area fight (e.g., SEAD, JSEAD) and deliver counterfires to diminish the enemy's ability to employ his artillery effectively.
- Destroy enemy C2 and prevent the escape of retreating elements.

- Execute corps shaping operations in concert with other corps assets against uncommitted enemy forces, lines of communication (LOCs), etc.

HASTY ATTACKS

3-8. The possibility of a hasty attack should be anticipated and the necessary preparations put in place. Hasty attacks are normally launched with fragmentary orders (FRAGOs), using forces and CSS stocks on hand. As the decision is made to conduct a hasty attack, reinforcing FA brigades to the rear of the advance guard should go into firing positions as close as possible to the lead brigade. As in the deliberate attack, fires should help fix the enemy and provide counterfires and long-range fires to delay enemy reinforcements. Priority is initially given to the covering force and then shifts to the main battle area with the objective of destroying the enemy's forward direct and indirect fire capabilities. Just before the attack, fires are massed on enemy positions on the objective and, on order, shifted to enemy rear positions during the final assault.

SEARCH AND ATTACK OPERATIONS

3-9. Search and attack operations are normally conducted in an environment of friendly air and fire superiority against squad and company-sized enemy forces equipped only with small arms and mortars.

3-10. FA fires are delivered by DS artillery units from FS bases within brigade AOs and supported, as required, by corps arty units for additional coverage and range. Bases should provide complete coverage of the AO and be mutually supporting. Establishment of such firebases may often require the insertion of FA assets and resupplies by helicopter.

RAIDS

3-11. Division and smaller-sized maneuver units normally conduct raids to seize and destroy critical assets or decisive points. Whenever possible, these units should be supported by FA fires.

3-12. Artillery raids may be executed as aggressive, short duration operations against high priority targets. Likely candidates are enemy CPs, air defense (AD) radars, ammunition and fuel dumps, or unprotected troop concentrations. The key consideration is subjecting vulnerable enemy units and facilities to intense artillery fires throughout the engagement area.

3-13. For example, displacing FA forward by air with enough and correct ammunition allows the air assault division to extend the range of its howitzers and to engage enemy targets with artillery to the maximum range of division aviation assets. Such artillery raids require extensive training and precision execution to achieve split-second timing and to reduce risks to the artillery and supporting assault helicopters. Artillery raids work best when they are not vulnerable to threat ADA, land unopposed, and leave before hostile forces react and make contact. Airmobile FA battalions normally plan and coordinate raids in battery strength. Habitual battery attachments include man-portable air defense system (MANPADS) Stinger teams, pathfinders, and attached infantry for security. Observers should also be available aloft or on the ground to adjust fires.

FA ORGANIZATION FOR COMBAT

FA IN SUPPORT OF OFFENSIVE OPERATIONS

3-14. The allocation and synchronization of FA fires in support of the corps' main effort help control the tempo of offensive operations. Two of the five fundamentals for organizing FA units for combat (Appendix C) have particular relevance during offensive operations:

Weight the Main Attack

3-15. Maneuver commanders normally commit the majority of available FA assets to support the main attack. Assigning R or GSR tactical missions to augment the fires of artillery units in direct support of the attacking force accomplish this. For example, when infantry divisions conduct deep operations, corps normally reinforces the limited capabilities of their organic weapons. Maneuver commanders in coordination with the FSCOORDs can also weight the main attack by positioning additional FA units within sector and increasing ammunition allocations. For example, in a movement to contact, a corps MLRS battalion may be positioned behind or with the lead division to provide coverage from the LD.

Maximum Feasible Centralized Control

3-16. In offensive situations, centralized control over FA assets can be reduced because supported forces are presumed to have the initiative. To maintain the momentum of attack and to assist in the retention of the initiative, force commanders may grant subordinate FA commanders wider latitude through a more liberal assignment of DS and R missions. However, in such cases, force commanders relinquish first priority on calls for fire, fire planning and, normally, positioning authority.

FA IN SUPPORT OF SECURITY FORCES

3-17. Security forces operate to the front, flanks, and rear to protect the main body from observation and surprise attack. Often operating at extended distances from the main body, they must be self-contained and task-organized with the necessary combat, CS, and CSS assets to fight independently or semi-independently. The limited number of maneuver units normally available for flank and rear security forces and large areas of coverage (especially in case of screening forces) further increases the need for very responsive FS. Priority of FA fires to the advance guard during a movement to contact also facilitates transition to a hasty defense or attack.

3-18. Each maneuver brigade in a covering force normally has one artillery DS battalion, with corps arty FA battalions and divisional cannon and MLRS units in GS. If the mission places security forces beyond the range of FA delivery systems supporting the main force, the requirement is normally met by attaching FA units to security elements or by augmenting organic or habitually associated DS FA formations. If possible, a mixture of FA calibers helps deceive the enemy as to the composition of the force. If sufficient artillery is available, a DS FA battalion should support each maneuver battalion in a covering force.

3-19. As a prelude to an attack when the enemy's disposition is unknown, a division-sized reconnaissance in force may attempt to find enemy strong points

and weaknesses. The division should be supported by its organic FA, one or two FA brigades, and may receive GSR fires from the on-line defending division.

FA IN SUPPORT OF EXPLOITATIONS AND PURSUITS

3-20. Corps FA brigade elements positioned and moving behind a division's lead brigade may reinforce the division's organic FA to neutralize, fix, or destroy pockets of resistance prior to direct fire engagements.

AIR ASSAULT OPERATIONS AND ARTILLERY RAIDS

3-21. Tailored div arty assets and normally one corps FA brigade support division air assault operations. The division generally receives priority of corps fires when executing air assault operations: reconnaissance, air assault, attack, and linkup.

FA POSITIONING IN THE OFFENSE

3-22. By positioning artillery in particular sectors and assigning zones of fire, force artillery commanders can weight the main attack and facilitate future operations. Positioning for offensive operations may use varying techniques such as the assignment of "goose eggs" for enhanced flexibility. Another technique is the designation of range lines, which gives commanders a minimum or maximum range within which to deliver fires. In some cases artillery must maintain a specified position relative to other elements in an attack formation. For example, main body and advance guard formations to include supporting FA elements move in march columns to facilitate an immediate attack or a hasty defense from the march. Also, reinforcing FA battalions may be required to maintain a position relative to their DS artillery battalion accompanying a maneuver brigade in a movement to contact or in pursuit.

3-23. Artillery with a GS or GSR mission under corps arty or div arty control is positioned by the commander of the respective force artillery in coordination with FSEs and force G3s (S3s at brigade level).

3-24. Counterbattery and countermortar radars are positioned to maintain radar coverage over forward maneuvering forces. The controlling FA headquarters to which the AN/TPQ-36 and AN/TPQ-37 are assigned or attached are responsible for positioning and moving the radars. Normally, the AN/TPQ-36 radars are controlled by the DS battalion to which they are attached. The AN/TPQ-37 radars are controlled by the controlling div arty, FA brigade, or corps arty.

3-25. In the offense, corps arty and div arty firing units and HQ elements are positioned in main battle area (MBA) brigade sectors without accepting undue risk of survival and to support security forces whenever possible. As divisions cross the LC/LD in an attack or movement to contact, accompanying DS and reinforcing div arty and corps arty elements will travel well forward, integrated into march columns and prepared to respond rapidly to enemy activity. Div arty TOCs will initially be located near the LC/LD to maintain C2 and manage sustainment requirements. DS units advance with their maneuver brigades until they reach the end of the protective umbrella of the in-place MBA FA battalions. At this point, they continue movement until sufficient enemy activity

warrants action as in movement to contact for a hasty attack. In the interim, div arty HQ moves behind the lead brigades and controls fires in GS of the division. FA brigades position themselves to control corps GS fires and request positions for subordinate GS battalions through their controlling HQ to provide continuous support as lead division(s) advance. Forward MLRS units, in particular, can engage targets beyond the range of GS cannon artillery and travel to the rear of the advance guard. The overall intent is to exploit weapons ranges, facilitate communications, allow rapid massing of fires, and preclude untimely displacement when fires are needed the most. FA units may also be required to displace to support advance, flank, and rear guards and to change positions rapidly in response to main body maneuver unit redeployments.

3-26. For reconnaissance in force operations all available artillery is positioned to provide fires in depth. Accompanying artillery is positioned on the friendly side of the forward line of own troops (FLOT) and initially does not move with the supported force. However, at no time should reconnaissance elements be outside FA coverage. Also, div arty clears positions for Firefinder radars with the force HQ FSE.

DISPLACEMENTS IN THE OFFENSE

3-27. Timely displacements are essential for successful offensive operations. Units positioned by corps arty and div arty may be in danger of being left behind unless repositioning is frequent and synchronized to support the forward progress of maneuver brigades. For example, FA units supporting exploitations and pursuits must be as mobile as the supported maneuver units. However, even if forward movement is continuous, artillery must retain the capability to engage the enemy responsively; therefore, displacements should maximize continuous FS and be completed as rapidly as possible.

3-28. FA units move well forward prior to an attack with batteries and battalions displacing by echelon and carrying maximum amounts of ammunition. DS divisional artillery battalions move with their supported maneuver brigade or, in the case of airmobile, airborne, or light divisions, may be air assaulted to provide increased firepower in support of operations. Corps arty is integrated into the maneuver elements based on METT-TC. In a movement to contact, reinforcing corps arty FA brigades travel with the main body of the reinforced unit.

COMMUNICATIONS

3-29. During offensive operations, amplitude modulated (AM) radio and retransmission capabilities assume increased significance with mobile subscriber equipment (MSE) helping offset the loss of wire capabilities. The corps also establishes quickfire channels between radars and firing units and between lead maneuver elements and firing units to silence enemy indirect fire systems rapidly and to enhance the responsiveness of FA fires. Quickfire channels can be particularly useful in a movement to contact, enhancing lead unit survival and opportunities for mission accomplishment.

TARGET ACQUISITION

3-30. The primary mission of FA TA radars in the offense is to limit the effect of enemy indirect fire systems on maneuver forces. Counterfire radars are positioned based on corps arty/div arty G3/S3 recommendations to support the counterfire battle. Other considerations for TA in the offense in support of counterfire operations include:

- Identification of critical acquisition requirements to higher and lower HQ beyond the capability of organic assets to include nomination of specific target areas of interest (TAIs).
- An aggressive counterfire program within available targeting data and delivery assets.
- Smooth transition between offensive phases and continuous coverage of the zone of operation.

3-31. C2 over radars during offensive operations is normally more decentralized for defensive operations, to include cueing and displacements. To streamline acquisition and counterfire efforts, the controlling FA HQ, in close coordination with FSEs, should designate cueing agents (forward observers, UAV, striker) that can cue radars directly. Radar sections should be informed who these agents are and who has priority. Based on map reconnaissance, controlling HQ should assign general position areas and sectors of search. TA assets should be positioned well forward to maximize range capabilities and to provide early detection of targets that could impede the forward movement of supported maneuver forces.

3-32. TA assets should always be in position and ready to acquire targets. One way to do this is by “leapfrogging” radars, having one in position ready to acquire targets and one moving forward. While on the move during offensive operations, radars must retain the capability to conduct hasty occupation. If required to displace forward into hasty or new position areas before survey control has been established, TA assets should use hasty survey techniques. As an alternative, quick and accurate location surveys can be achieved with global positioning system (GPS) assets, if available.

3-33. Controlling HQ should establish critical friendly zones (CFZs) to protect friendly elements. For example, CFZs may be established around breaching lanes during a penetration. To conduct the counterfire battle more effectively, controlling HQ may also designate call-for-fire zones (CFFZs) and artillery target intelligence zones (ATIZs) (see FM 6-121 for additional details).

3-34. TABs organic to heavy division MLRS battalions plan for an overlapping umbrella of counterbattery/countermortar coverage to protect the division as it moves forward.

SURVEY

3-35. Once an attack begins, it is difficult to extend survey control to subordinate FA battalions because of the increased frequency of displacements during the offense. Hasty survey techniques (map spots and simultaneous observation [SIMO]) for location and common direction are, therefore, used extensively with survey operations focused on extending control forward as quickly as possible.

3-36. Some techniques to provide survey in the offense are:

- Reuse of previously surveyed positions.
- GPS. Prompt surveys are essential for accurate fires in a fast-paced offensive operation. GPS combined with SIMO may provide this capability. Combined GPS/inertial navigation system (INS) capabilities on firing platforms such as MLRS, high mobility artillery rocket system (HIMARS), and Paladin howitzers and the use of enhanced position locating reporting system (EPLRS) and embedded battle command (EBC)/ Force XXI battle command brigade and below (FBCB2) software provide extensive positioning and situational awareness coverage on the battlefield.
- PADS. Using a mix of ground and helicopter-mounted PADS enables survey to be extended quickly over a large area.
- Covering force. During offensive operations, more survey assets should be placed forward with the covering force. This helps establish survey control points for covering force and main body forces when they arrive.

SECTION II - FA FIRES IN SUPPORT OF DEFENSIVE COMBAT OPERATIONS

GENERAL

3-37. The immediate purpose of defensive operations is to defeat an enemy attack and, secondarily, to retain key pieces of terrain, gain time, concentrate forces elsewhere, and erode enemy resources. Employing a mobile and/or area defense, military forces defend only until they gain sufficient strength to shift to the offense and attack. During force projection operations, forward presence forces may only defend until sufficient reinforcing units arrive in theater. Deploying forces may also conduct defensive operations to support the buildup of additional combat power in theater.

3-38. At corps and division level, the commander may assume the defense in one area of the battlefield as an economy-of-force measure to allow him to attack elsewhere. Defense plans always include a point of main effort where the defender masses the effects of overwhelming combat power, striking the enemy at his most vulnerable time and place to regain the initiative.

3-39. A key element of successful defensive operations is to find and kill the enemy at a distance before being forced into high casualty, force-on-force close combat. The corps disrupts the attacker's tempo and synchronization to prevent him from massing his combat power at the point of attack. This is accomplished by massing precision fires before the enemy arrives in the MBA; defeating or misleading enemy reconnaissance forces; conducting deep operations that destroy critical enemy support infrastructure, FS assets, C2 nodes, and ADA sites; disrupting or destroying key formations or preventing their timely introduction into the battle; coordinating and synchronizing joint assets; and conducting spoiling attacks to preempt enemy attacks. If the enemy makes temporary gains in an area, friendly forces must counterattack the penetration before the enemy can consolidate his gains.

EMPLOYMENT OF DEFENSIVE FA FIRES

GENERAL

3-40. As in the offense, FA's lethality and flexibility are also key in the defense. Within the range of FA weapons, FSCOORDs can maneuver FA fires rapidly to meet enemy attacks in both the main and supporting sectors to engage HPTs and deprive the attacking force of the initiative.

3-41. As in the offense, artillery fires supporting shaping operations in deep areas in the defense can assist in defeating or deterring the enemy before he can reach MBA forces. Shaping fires will be used to separate enemy echelons, silence his artillery, and defeat maneuver elements as they move forward. HPTs include the enemy's trailing or reserve echelons, AD sites, C2 modes, and critical infrastructure facilities. Corps shaping operations in support of decisive operations will engage enemy divisions as they approach the covering force area (CFA) and shift to reserve elements when the CFA battle starts. Division deep area FA fires will target enemy formations approaching the CFA until they reach the initial delay line. Depending on METT-TC conditions, priorities may include division C2, deep reserve movements, artillery and ADA systems. For further details see Section III below.

3-42. Supported maneuver force commanders must establish priorities for targeting efforts by approving the high-payoff target list (HPTL). They must target both close and deep area targets with available FA assets. Enemy reserves must be weakened to the extent that they cannot be committed to overwhelm or bypass friendly forces. Within division sectors, div artys control division deep and counterfire operations. DS battalions support their maneuver brigades to fire on enemy infiltrations and penetrations. By shifting and massing FA combat power quickly, commanders can react rapidly to unexpected enemy actions, initiate decisive operations, and deny the enemy the initiative.

3-43. In an area or mobile defense, FS to include FA fires provides weight to the main effort and can be critical in offsetting a lack of maneuver assets. FA fires are generally employed at maximum range to disrupt, delay, and attrit enemy forces before coming into range of friendly direct fire systems. FA fires may be used to seal the base or blunt the nose of penetrations, destroy enemy forces within the penetration, or support counterattacks against penetrating forces. Counterfire in support of non-mechanized division defensive operations is particularly important because of their lack of armored protection. Dismounted infantry are at considerable risk from enemy artillery when moving from prepared positions to subsequent alternate or supplemental positions. Fires and delay operations attrit the enemy, creating conditions for successful counterattack. Shaping fires will be used to separate enemy echelons, silence his artillery, and defeat some maneuver elements as they move forward. Finally, direct and indirect fires are used to destroy the enemy in the close area battle.

FA IN SUPPORT OF DEFENSIVE SECURITY FORCE OPERATIONS

3-44. The covering force area should be deep enough so that MBA forces are not in range of the enemy's artillery. This significantly reduces the effectiveness of enemy preparatory fires and reduces the number of enemy artillery weapons available in the initial MBA battle. Covering force maneuver battalions or

cavalry squadrons usually fight from a series of mutually supporting battle positions. These positions make maximum use of terrain, obstacles, and carefully planned, longer-ranging friendly indirect fires. Laser-guided munitions directed by Strikers and COLTs can provide precision fires. The supported covering force usually makes a phased withdrawal by adjusting to the pressure at hand and mission. Counterattacks, supported by FA fires, may be needed at times and places in the defensive framework.

3-45. The depth of the security area for screen, guard, and covering forces may be affected by the availability of supporting artillery units, their range, and ammunition stocks. While cannon artillery may range to 30 km with rocket-assisted projectile (RAP) ammunition, the amount of available RAP ammunition and its capabilities are less than dual-purpose improved conventional munitions (DPICM). FA fires must be planned to mass at critical times and places. Observers must watch obstacles and plan fires to cover them. FS measures should also be permissive to facilitate engaging the enemy.

3-46. In screening missions, fires may be provided by MBA FA units positioned to delay and harass the enemy with indirect fires. Guard forces, on the other hand, must protect the main force and require more FA support than screening force. Supporting FA units and counterbattery radars should be positioned well forward to range targets.

FA IN SUPPORT OF MAIN BATTLE AREA OPERATIONS

Mobile Defense

3-47. The main FA effort in a mobile defense is providing continuous and massed supporting fires to the striking force and the destruction of the enemy force. They must be delivered with decisive effect once the striking force initiates contact with the penetrating enemy. Commanders must plan for the forward displacement of artillery assets or placing FA under direct striking force control. Since deliberate planning and massing of fires is more complex for the striking force in a mobile defense, special attention must be given to FS coordinating measures (FSCMs). Precautions must be taken to assure the rapid movement of FA systems, TA systems and CSS assets. FA units should remain with the striking force.

Area Defense

3-48. In an area defense, with friendly forces deployed laterally and in depth, priority of FA support is normally given to maneuver units on the enemy's main avenue(s) of approach. When the enemy's main attack enters division engagement areas (EAs) most fires will be massed into EAs, with emphasis on use of trigger points to initiate firing. Close coordination among FA TOCs, FSC/FSEs, and force G3/S3s is needed to plan for potential counterattacks and other offensive actions.

FA ORGANIZATION FOR COMBAT

COVERING FORCE AREA

3-49. Covering forces may have minimum maneuver combat power. To compensate for the lack of maneuver forces across a wide frontage and to maintain an adequate level of fires during displacements, covering forces may

require additional FA assets. These FA units may be attached or given an R or DS mission. Considerations for allocating FA support to the covering force in the defense are similar to those in the offense. Included are the amount and type of available artillery and other FS assets, the force commander's intent, and other METT-TC conditions. In turn, these may result in an allocation such as:

- One FA battalion DS to each battalion-sized maneuver element in the covering force.
- Nonstandard tactical missions for MBA artillery units to increase their responsiveness to the covering force FA HQ.
- A corps arty FA brigade per covering force maneuver brigade.

3-50. The deployment of covering forces across a wide frontage and in considerable depth also presents special challenges for supporting units and their parent HQ to provide adequate forward support. If MBA divisions control the covering force and supporting artillery units, attachment may not be necessary and the assignment of more decentralized tactical missions may suffice. Otherwise, a change in normal command relationships may be required:

- This may be the case when the covering force is an ACR under corps control or if an infantry or armor maneuver brigade or division receives the covering force mission. As previously noted, if an FA brigade is attached to the ACR, the FA brigade becomes the force FA HQ and the FA brigade commander becomes the covering force FSCOORD. The ACR commander should then consider making ACR-organic howitzer batteries OPCON to the force FA HQ, thereby placing all field artillery under a single FA commander.
- If an FA brigade is assigned a DS support relationship to a maneuver brigade, the DS battalion becomes OPCON to the FA brigade. When the FA brigade receives a change in mission, the DS battalion will also receive a change in mission.
- If a corps controlled covering force is employed, FA units supporting the covering force will normally revert to corps or division control after the covering force fight.

3-51. Calibers and systems to include TA assets representative of those in the MBA force are deployed in selected areas of the covering force. The intent is to make the attacking enemy believe that he is meeting the main defense and cause him to deploy early. FA units in the covering force area must also be as mobile as the supported unit to retain their responsiveness by staying abreast with the movements of the supported unit.

3-52. As CFA elements displace into the MBA before the covering force disengages, their fires will come under the control of the defending MBA divisions. Corps arty battalions retained in the MBA will initially support the disengaging covering force with deep fires and counterfires with o/o priority to the close area battle.

MAIN BATTLE AREA

3-53. FA units in the defense, as in the offense, are organized to weight the main effort; however, control is more centralized. Control is designed to achieve

a balance of maximum flexibility for corps and division commanders and adequate support for committed forces. For example, in the defense more FA units are assigned GS and GSR support relationships, giving force commanders priority on calls for fire, fire planning, and positioning. Division or corps will retain a preponderance of MLRS battalions and other supporting FA brigade assets in a GS/GSR role for counterfires and in support of close area and deep battles.

3-54. Defense within the MBA may also be kept dynamic through the formation of a large mobile reserve. Force artilleries are organized for combat to support reserves when committed. On-order tactical missions alert FA commanders to prepare for this support and to plan for a smooth transition. Early liaison between the FA and reserve force enhances this shift and makes FA support more responsive.

POSITIONING AND DISPLACEMENTS IN THE DEFENSE

3-55. GS and reinforcing FA units in the MBA must be able to support covering forces and counterattack formations. They may need to reposition laterally and in depth to ensure that they are out of the direct path of attacking enemy elements while staying within range of the attacker's formations. Routes and alternate positions must be reconnoitered. Supporting FA units will also be required to displace responsively in support of striking force operations in a mobile defense when engagement areas are outside range. Alternatively, the striking force may be augmented with additional accompanying artillery. Corps arty and div arty CPs will also displace as required to maintain control of firing assets.

3-56. To reinforce the fires of FA units deployed as part of the covering force, some MBA FA units may be assigned supplementary positions forward of the forward edge of battle area (FEBA) and given additional ammunition authorizations. However, these MBA elements must also have sufficient time and resources to prepare and occupy their primary positions behind the FEBA. In addition, they need to coordinate subsequent positions, passage points, and routes well in advance with controlling maneuver units. When the time comes, MBA FA units should be in position to cover the withdrawal of the covering force and its supporting artillery.

3-57. MBA artillery CPs coordinate the transfer of FA missions and targets developed by displacing CFA artillery prior to the actual passage of lines. This is essential for providing continuous fires during displacement. See FM 6-20-40, *TTP for FS for Brigade Operations* for specific coordination requirements. The exchange of liaison personnel can also assist in the delivery of responsive fires during these and other retrograde and passage of lines operations.

TARGET ACQUISITION

3-58. Available FA TA radars should be positioned as far forward in the security area as feasible. Positioning is based on the commander's guidance and METT-TC factors with special emphasis on security arrangements for forward-displaced radars. Security force FA units use available TA means to detect the enemy early, monitor his movement, and pass target information to MBA elements.

3-59. Since FA brigades and ACRs are not authorized organic FA radars and target processing personnel, WLRs may be attached to the covering force FA HQ. When divisions control the covering force, the div arty target processing section should augment the covering force FA HQ. When the size of the security area makes centralized control infeasible, it may be necessary to further attach radars to individual artillery battalions to provide effective counterfire coverage.

3-60. Counterfire TA elements should be shifted to focus on the enemy's most likely avenues of approach where he can be expected to concentrate his indirect fire weapons. Available assets should be emplaced across the entire corps and division front. They may also be attached to FA brigades or cannon battalions for logistic support for continuous, maximum lateral and in-depth MBA coverage. As attacking formations approach the FLOT, acquired targets are prioritized according to the supported commander's attack criteria.

METEOROLOGY

3-61. Defensive operations do not place any unusual requirements on div arty and FA brigade meteorology (met) sections. Met flights must be flown and met messages updated on a regular basis. FA brigades may be used to provide met coverage in depth.

SURVEY

3-62. Survey in the defense is simplified in MBA sectors because survey parties can move with relative freedom behind the FLOT and the amount of time generally available for preparations is greater. Subsequent positions are usually known, and survey support can be coordinated and performed before actual displacement.

3-63. During defensive operations, survey elements, particularly PADS, often experience a sharp increase in services requested by non-FA elements. Maneuver units and engineers may request assistance in accurately locating obstacles, target reference points, and observation posts and/or listening posts.

SECTION III - FA FIRES IN SUPPORT OF OTHER OPERATIONS

GENERAL

3-64. Other operations are routinely conducted as part of any corps or division operation. They contribute to overall combat effectiveness but are not distinct actions as are offensive or defensive operations. Included are counterfire, deep, rear, and SEAD operations.

COUNTERFIRE OPERATIONS

3-65. Threat FS systems can potentially inflict serious damage on friendly maneuver forces, FS systems, and supporting infrastructure; therefore, the enemy's FS system must be eliminated as a viable threat. As such, counterfires are a vital consideration for both force and FA commanders. Counterfire is a shaping operation. To achieve the required degree of fire superiority at the

critical place and time on the battlefield, planners must coordinate all FS assets among all echelons of command.

3-66. To gain the increased freedom of action and protection for supported maneuver commanders, counterfire must destroy or neutralize enemy weapons, counterfire radars, and supporting C2, communications, transportation, and logistic facilities. To accomplish this, units must employ all suitable counterfire capabilities available to the combined arms team. Included are thorough planning and coordination of intelligence and TA assets to locate threat FS assets quickly and accurately.

3-67. Counterfire can be either proactive or reactive. Proactive counterfire includes those actions taken to target and engage the enemy's FS system before it becomes active. In reactive counterfire, the friendly FS system responds to the enemy fires. The location of target sets, capabilities of sensor platforms, and ranges of available weapon systems dictate who is responsible for what portion of the counterfire battle. In most situations, the corps is responsible for proactive, deep area counterfire, establishing overall priorities, and allocating resources. Corps has the required TA and attack systems to target and engage the enemy's FS system before it becomes active. Proactive counterfire is used whenever possible when there is sufficient time to identify, locate, and target enemy systems.

3-68. Mid- to high-intensity conflicts demand an aggressive, proactive counterfire effort to limit damage from hostile FS systems. In reactive counterfire, divisional FS systems respond primarily to enemy mortar and artillery fires during or immediately following enemy engagement of friendly forces during decisive operations. Reactive counterfire normally requires quick response capabilities for optimum effectiveness and can benefit from the establishment of quick fire channels. Maneuver brigades may also have counterfire responsibilities against the mortars and artillery of committed enemy regiments as the division conducts counterfire against enemy's div arty.

3-69. During the offense, friendly counterfire is initially focused on enemy long-range weapon systems used to conduct hostile counterfire missions. It is a critical element for friendly forces to generate the necessary momentum and to counteract enemy artillery.

3-70. In the defense, counterfire should be focused on artillery formations supporting ground attacks and on the enemy's counterfire systems. FA cannon and MLRS units are positioned to meet the enemy's main effort with counterfire TA elements focused on the most likely avenues of approach where the enemy can be expected to concentrate his indirect fire weapons. Available assets should be emplaced across the entire corps and division front for continuous, maximum lateral and in-depth MBA coverage. As attacking formations approach the FLOT, acquired targets are prioritized according to the supported commander's attack criteria.

3-71. MLRS may be the counterfire weapon of choice with a maximum range of 60 km (guided MLRS [GMLRS]) and a minimum range of 10 km. It is positioned well forward to range deep into enemy formations. Augmentation by corps arty also provides divisions additional counterfire flexibility. If the division has two reinforcing FA brigades, it may assign the counterfire mission to one of them and permit the div arty and the other FA brigade to focus on the

close area fight. For specific counterfire tactics and techniques and the employment of counterfire radars, see FMs 6-20-30 and 6-20-60, respectively.

DEEP OPERATIONS

GENERAL

3-72. Application of combat power beyond the close area battle to defeat the enemy rapidly with minimum friendly casualties is preferable to attrition through sequential offensive and defensive operations. In the defense, for example, operations in depth prevent the enemy from gaining momentum in the attack. Sudden strikes by both fires and maneuver from a variety of directions synchronized with other disruptive effects, usually impact on decisive operations and can stall and overwhelm an attack before it has begun.

3-73. To synchronize operations between the deep and close areas, commanders integrate and prioritize reconnaissance, intelligence, and TA efforts to focus fires and maneuver at the right place and time on the battlefield. Corps and division DOCCs normally plan and coordinate deep operations and monitor their execution from main CPs. In the offense and defense, the corps coordinates deep operations with its divisions to shape the battlefield and synchronize operations as part of the overall corps plan. Assigned or attached corps assets normally available for deep operations are ground maneuver, air assault, and airborne units; FA cannons, rockets, and missiles; PSYOP; EW; and attack helicopters. Maximum synergistic effects are achieved through a combination and application of all available joint and combined arms assets.

3-74. Deep operations are neither continuous nor sustained at constant levels of effort. They are developed to achieve specific results based on the enemy situation and assets available. For example, deep fires may shift to mass fires in the close area battle and then shift back to deep targets.

FA EMPLOYMENT CONSIDERATIONS

Corps

3-75. Corps shaping operations can provide protection by delaying or destroying the enemy's operational reserves and capabilities to bring combat power to bear on friendly close combat forces. By attacking uncommitted enemy forces, and disrupting the enemy's support and C2 systems, shaping operations can prevent the enemy from using essential resources where and when he wants in close operations. However, the outcome of decisive operations should never totally depend on the results of shaping operations. Although enemy forces may be attacked deep, their destruction is often difficult to achieve because it requires massive resources. As improved smart/brilliant FA munitions are fielded, future effectiveness may be increased. Currently, however, disruption may often be a more realistic goal.

3-76. The purpose of corps deep operations extends beyond shaping the close area battle, isolating the enemy in the forward area, and establishing favorable conditions for future decisive operations. Deep operations may be decisive by themselves and may be separated from the close area battle in time and space. The corps may strike deep HPTs to limit an attacker's options, destroy his cohesion, nullify his FS and air defense assets, disrupt his C2, destroy his

supplies, affect closure times for his echelons and reserves, and break his morale. In support of joint operations, deep FA fires can also support JSEAD, TMD, and JAAT operations.

DIVISION

3-77. At division level, deep operations in the defense are initially targeted on enemy indirect fire systems in counterfire operations, C2 nodes, AD systems, and uncommitted forces. The priority of attack during this phase is on economy of force units and those moving away from engagement areas. When the enemy moves into EAs, the delivery of most deep artillery fires may be temporarily suspended to focus on the close area battle. However, deep targeting and intelligence operations will continue, and the deep fight will resume based on the status of close area operations and ammunition availability. Enemy forces not yet committed to the close area fight will be targeted as they enter the divisions' deep operations area after a handoff from corps. Fires will be delivered to disrupt the enemy's tempo, movement, and synchronization.

REAR SECURITY OPERATIONS

GENERAL

3-78. The fluidity and tempo of corps and division offensive and defensive operations pose special challenges for rear area security. The forward movement of units and their sustainment in decisive and shaping operations are critical if friendly forces are to retain freedom of action and maintain or regain the initiative. To achieve success, the corps and divisions must protect their capability to sustain forward elements and defeat enemy forces intent on disrupting rear operations.

3-79. Corps and subordinate divisions develop rear operations defense plans to counter threat forces. These plans are synchronized with decisive and shaping operations in corps and division main CPs. The plans identify friendly forces to include FS assets to deal with any substantial rear area threat while minimizing the impact on friendly operations. They must reflect the same agility, versatility, depth, and synchronization required for close and deep area operations.

EMPLOYMENT OF REAR AREA FA FIRES

3-80. Depending on actual circumstances, FS for rear operations may be initially provided by Army or Air Force aviation or air cavalry assets. For example, attack and OH-58D helicopters are ideal assets to assist rear CPs initiate and control rear area FS operations. If friendly aircraft are used extensively against rear area enemy formations, MBA FA units may also be called to support JAAT operations. Typically fires will be in close support to reaction forces or the TCF but could also require interdiction of other unforeseen elements threatening corps and division support units and priority protection points.

3-81. Corps arty and div arty subordinate units usually will establish liaison with rear CPs if located within sector. Although not assigned to the rear area command, they may come under the rear area command's control for security operations and terrain management.

3-82. To minimize the potential for fratricide, fires should be cleared at the lowest echelon (base, base cluster, rear area operations center (RAOC), or rear CP [in order]), with clearance methods and communications links clearly defined in supporting plans.

FIELD ARTILLERY ORGANIZATION FOR COMBAT AND POSITIONING

3-83. As artillery assets are seldom sufficient to dedicate FA units to support rear operations as a sole or primary mission, FA support can present special planning and coordination challenges. Rear area FA support requirements are normally met by positioning GS and GSR FA cannon units so that they can range rear areas while continuing to perform their main missions in support of deep and close area operations. If distances preclude this, FA units may be assigned o/o missions to support corps or division rear area operations. In such cases, FA firing units will have to reconnoiter rear area positions and routes.

3-84. Units so employed are not in reserve; rather, they are assigned a tactical mission in support of the respective maneuver force and must plan accordingly. This includes establishing liaison with the supported HQ, rear area CP, and FSE to integrate their fires into rear area battle plans. Consideration should also be given to establishing prestocked ammunition sites. For additional details see FM 6-20-30.

3-85. If the threat requires designation of a TCF, then the likelihood of a significant rear area action requiring FS is high. In this case, the maneuver brigade TCF most likely would have its habitually associated DS FA battalion in support.

SUPPRESSION OF ENEMY AIR DEFENSES

GENERAL

3-86. SEAD is critical to the survival of corps and division air assets. It must be accomplished quickly and efficiently in support of aviation operations, particularly in air assault operations. It is an integral part of aviation mission planning synchronized with and integrated into overall corps and division operations. Lethal friendly fires suppress, neutralize, and destroy known and suspected threat AD weapons, radars, warning sites, and CPs. The division has primary responsibility for the suppression of ground-based air defense to the limits of observed fire. Targets beyond observed fire become a primary Air Force responsibility. In addition, divisions have secondary responsibility out to the range limit of their indirect fire weapons.

SEAD CATEGORIES

3-87. SEAD operations are divided into three categories: campaign, localized, and complementary.

FA TACTICS AND TECHNIQUES IN SUPPORTED SEAD OPERATIONS

3-88. SEAD must begin early as complementary SEAD to decrease the density of hostile air defense systems and make friendly aviation assets more effective in the close area fight. This is particularly critical for infantry divisions since they rely heavily on attack helicopters and air support for deep operations and subsequent close support. The primary SEAD role of divisional FA systems is in

conducting localized SEAD to open corridors or suppress specific attack objectives in cross-FLOT operations. Suppression will begin prior to friendly aircraft arrival and should continue as long as the aircraft are within range. Egress routes are established and suppressed in a similar manner. Since the opening of corridors is a major operation requiring a heavy commitment of resources, only a limited number of corridors can be established in a given period of time.

3-89. Corps arty with div arty assistance can suppress accurately located campaign SEAD targets to the maximum range of indirect fire systems with unobserved fires. Fires must be coordinated with adjacent and subordinate units to ensure all suppression operations are mutually supportive along with joint efforts, where appropriate.

3-90. To support corps and division aviation elements, the G3, based on FSE recommendations, may change the artillery's task organization and priority of fires. This may include a mix of DS, R or GSR artillery, or assigning the aviation brigade priority of fires for a specific mission. FA units may also be relocated to support their primary mission and to provide SEAD support in the form of preplanned and on-call fires.

3-91. In addition to available 155mm howitzers, MLRS can be an effective SEAD weapon by creating corridors at the FLOT or engaging several targets with its multiple-aim point capability against thin-skinned AD weapons and radars. However, MLRS use in a SEAD role must consider the required safety distance for suppressing targets at the FLOT and in engagement areas, reload times for launchers, and normal relocation requirements after each launch.

3-92. Smart munitions and advanced sensors can also reduce target location difficulties if the location is within the sensor's range. Artillery-delivered smoke in support of SEAD operations can be both an advantage and disadvantage. Smoke can hide aircraft from enemy AD weapons that use visual acquisition. However, smoke is ineffective as a countermeasure against electronic sensor-guided AD systems and can also obscure targets and prevent friendly aircraft from identifying enemy AD systems.

3-93. As an additional SEAD consideration, fires from mortars, cannon, and rocket artillery pose hazards to friendly aircraft activities. The highest probability of conflict between aircraft and surface-to-surface indirect fire occurs at relatively low altitudes in the immediate vicinity of firing units and target impact areas. Airspace coordination measures must be designed to reduce any potential hazard.

SECTION IV - OTHER OPERATIONS

GENERAL

3-94. Corps and divisions may also be required to conduct other operations, such as infiltrations, retrograde operations, river crossings, and encirclements. These operations may be executed in combination, sequentially, or as part of the offense or defense.

INFILTRATIONS

GENERAL

3-95. Infiltrations are often used as a specialized tactical tool in support of deception operations, small unit actions, intelligence collection, or to posture a unit for an attack. They are normally executed by light infantry elements that move through an enemy-held area to a position of advantage in the enemy's rear. Infiltrations are not limited to movement on foot and may include light and some armored vehicles to enhance FS, long-range communications, and supply and ammunition availability.

FA TACTICS AND TECHNIQUES DURING INFILTRATIONS

3-96. Although infiltrations normally consist of platoon- and company-sized formations and generally do not exceed brigade-size, FS and control are frequently complex and difficult. FS to include counterfire radar must be available to infiltrating forces throughout the operation. Brigade-sized infiltrations will normally have at least one DS FA battalion well forward to support both the infiltration and attack on the objective. Additional FA units should be placed in a reinforcing role to DS units, especially longer-ranging 155mm SP howitzers of Corps Arty FA brigades, with MLRS used to support the actual attack or to defend against an enemy counterattack. Supporting artillery fires can be used to target known enemy locations and mask the movement of infiltrating forces by firing false preparations into other areas of the battlefield. FS control measures must be established and followed to prevent fratricide of friendly forces deep in enemy territory.

RETROGRADE OPERATIONS

GENERAL

3-97. A retrograde operation is an organized movement to the rear away from the enemy. Reasons may include a requirement to disengage from combat, avoid combat under undesirable conditions, draw the enemy into an unfavorable situation, gain time without fighting a decisive engagement, place friendly forces into a more favorable position, and permit use of a portion of the force elsewhere. They may be executed in combination, sequentially, or subsequent to an offensive or defensive mission. The three types of retrogrades are delay, withdrawal, and retirement.

FA TACTICS AND TECHNIQUES DURING RETROGRADE OPERATIONS

Delay

3-98. FA tactics and techniques for covering force operations during the defense apply to retrograde operations. To trade space for time while inflicting maximum damage on the enemy, FA fires should be delivered at maximum ranges and as early as possible. Artillery should be positioned in depth and displace by echelon to ensure continuous fires.

Withdrawal

3-99. Tactics and techniques previously identified for covering force operations and in support of attacks, delays, feints, or demonstrations are applicable. Fires should be planned for withdrawals under enemy pressure and without pressure.

The maximum feasible number of firing units should be forward with disengagement criteria clearly established and actions rehearsed. For example, to reinforce the fires of the covering force, additional corps FA units may be provided to the covering force with control reverting to corps arty as soon as possible. Organic divisional MBA artillery will also provide support when the covering force comes within range. Should the enemy attack before withdrawal is completed, FA assets will be employed to slow the enemy's advance, cover obstacles with fires, support spoiling attacks, provide protective fires, deliver massed fires to facilitate disengagement of friendly forces, and help extricate isolated units. SCATMINE and artillery smoke may be planned along enemy avenues of approach if needed to assist in covering force withdrawal. MBA FA units not supporting covering force operations will normally withdraw along with divisional maneuver forces at night. For considerations affecting the withdrawal of FA units in the covering force during rearward passage of lines, see rearward passage of lines paragraph below.

Retirement

3-100. Retirements are conducted when units move to the rear in an organized manner when not in contact with the enemy. Although retirements may be largely administrative in nature, commanders must be prepared to deal with enemy Level II and III rear area threats along the route of withdrawal. FA fires may be required to deal with such Level II and III rear area threats and to provide fires in support of tactical moves to the rear including support for advance and flank forces.

RIVER CROSSINGS

GENERAL

3-101. River crossings are normally a divisional responsibility with corps providing planning and resource support during defensive or offensive operations. They require centralized planning and control.

FA TACTICS AND TECHNIQUES IN SUPPORT OF RIVER CROSSING OPERATIONS

3-102. Corps arty and div arty assets are positioned to provide continuous FA fires during all crossing phases and subsequent operations. This includes the delivery of smoke to obscure crossing sites from the enemy and SCATMINE to interdict an enemy counterattack force. Priority of fires is with lead elements during the advance and the bridgehead force. Immediately before the assault, the division will fire a preparation and fire SEAD to support airmobile operations as required. Corps arty reinforces the bridgehead DS artillery with on-order missions and will conduct counterfire and counterbattery fires as required. DS FA units will cross as soon as possible to provide support for bridgehead expansion.

ENCIRCLEMENTS

GENERAL

3-103. Encirclements occur when the enemy has cut all ground routes of evacuation and reinforcement. Friendly forces should attempt a breakout before the enemy has time to block escape routes and deplete friendly force resources.

Other options are to attack, defend, or exfiltrate, employing security forces and reserves as noted under defensive operations.

FA TACTICS AND TECHNIQUES DURING FRIENDLY FORCE ENCIRCLEMENTS

3-104. As in most defensive operations, FA assets will be kept under centralized control to provide commanders the means to influence the battle more directly and to support a cohesive perimeter defense. In case of successful breakout, FS coordination measures will be critical to the linkup of converging friendly forces and the preclusion of fratricides.

3-105. In support of friendly breakout attempts, FA fires must be highly responsive and support the initial defense, breakout and rear guard operations, and movement to linkup. In the initial defense, firing units are positioned to allow rapid shifts to support the defensive perimeter without displacing to new positions. Units are also dispersed throughout the encirclement to limit their vulnerability to enemy counterfire. Continuous fires will be massed on the enemy at the point of penetration to develop overwhelming combat power to open the rupture point, suppress enemy direct fire systems, isolate the breakout from the enemy, and assist in disengaging from the enemy. Once the breakout is successful, priority for fires within the encircled force may be shifted to rear guard operations. FA fires in support of breakout operations should include supporting fires from corps elements outside the encirclement. If within range, they should support close area operations and provide deep FA fires to prevent enemy reinforcements from linkup with encircling forces or attacking the flanks of the unit breaking out.

FA TACTICS AND TECHNIQUES IN SUPPORT OF ENEMY FORCE ENCIRCLEMENT

3-106. If the decision is to reduce or destroy an encircled enemy by fires alone, FA fires, CAS, and attack helicopters will provide the primary firepower. However, experience has shown that this option requires overwhelming fires and is highly ammunition, weapon, and time intensive. Reduction by fire and maneuver uses a combination of fire and ground maneuver forces in attack operations to destroy the encirclement. It is a more assured and quicker method of forcing the enemy to surrender, displace, or face annihilation. It also allows the enemy less time to countermaneuver.

PASSAGE OF LINES AND RELIEF IN PLACE

GENERAL

3-107. Both offensive and defensive operations frequently include passage of lines or relief in place operations. A passage of lines is an operation in which a force moves forward or rearward through another force's combat positions with the intention of moving into or out of contact with the enemy. A forward passage of lines is normally conducted to perform an infiltration, exploit tactical success, or initiate a counterattack. A relief in place normally occurs during a defense when an incoming unit replaces all or part of a unit already in the combat area. These operations are extremely complex, involve a degree of risk, and require detailed, centralized planning and decentralized execution. Coordination including on-site liaison is critical to the successful execution and transfer of control and responsibility between stationary and passing commanders.

FA TACTICS AND TECHNIQUES FOR PASSAGE OF LINES AND RELIEF IN PLACE

3-108. Close coordination and understanding between FA commanders and staffs are essential for the smooth transfer of control. The emphasis is on positive control of fires and continuous fires during passage to include clear designation of a time or event for handover of control.

Forward Passage of Lines

3-109. During a forward passage of lines, FA units need to establish liaison with the unit in contact and its supporting FA battalion. The indirect fires of the unit in contact normally support the passing unit until the passing unit has moved into firing positions to support the continuation of the attack or until passing units are out of range. This allows the passing unit to complete passage with its assets and ammunition intact. DS FA units should be well forward in the passage sequence, moving with maneuver brigade formations. Corps arty assets are also forward to provide overlapping support by bounding battalions as the division advances. Prior to conducting a passage of lines, both in-place and passing units should plan massed, coordinated fires throughout the AO. After responsibility for the AO transfers to the passing maneuver force, the commander of the passing unit coordinates all fires. Passage of lines should be as rapid as possible to minimize the risk while in-place and passing elements occupy the same terrain. Coordination should include:

- Exchange of intelligence, FA support/FS plans, and standing operating procedures (SOPs). Mutual understanding of recognition signals and unit code words may be critical.
- Security measures during passage.
- Position areas for FA assets.
- Selected routes, movement control measures, and guides.
- Transfer of responsibility to respond to calls for fires and communication channels and frequencies.

Rearward Passage of Lines

3-110. As the enemy approaches the FEBA, the handover of the enemy from security to MBA forces becomes a highly critical part in the defense. Planning procedures for a rearward passage of lines are similar to those in a forward passage except that coordination is even more critical under enemy pressure. The unit in position provides the passing unit all possible assistance. The provision of FS consisting largely of FA assets is particularly important especially when covering the withdrawal of elements in contact during a delaying operation. FA missions and targets developed by the displacing artillery in the covering force area should be transferred well in advance of passage of lines to provide continuous fires while attempting to disengage.

3-111. Effective communications between FA battalions in the MBA and security area are necessary for a smooth transition and continuous FA support. This is best achieved when FA units in the MBA monitor covering force FA nets before handover and when security area FA units continue to use the same frequencies as they reposition into the MBA. The MBA FA battalions will answer calls for fire on these frequencies until all covering force maneuver

elements have relocated into the MBA. Specific communications procedures should be stated in the OPORD. Handling radio communications in this manner precludes:

- Security area FA units changing frequencies at a critical time.
- Issuing additional signal operating instructions (SOI) extracts to covering force FA units and running the increased risk of SOI compromises.
- Early detection of MBA nets by enemy jammers/direction-finding equipment before the MBA fight starts.

Relief In Place

3-112. Relief in place operations must be accomplished as quickly as possible and, if possible, in secrecy. The purpose is to reduce vulnerability to enemy action, particularly when friendly forces are intermingled. FA assets from both in-place and relieving units support the relief in place operation. Subject to available time, FA units should exchange plans and liaison personnel and conduct briefings and detailed reconnaissance. Liaison personnel from the relieved unit will remain with the relieving unit until FA support/FS plans have been coordinated. Published orders should specify the time of relief, units to be relieved and sequence, future missions, restrictions on advance parties, security, routes, and route priorities. To maintain security, relieving units use the relieved unit's frequencies and nets with the relieved unit's signal officer remaining in charge of communications throughout the relief operations.

3-113. DS battalions move with their maneuver brigades. Corps arty FA assets supporting the in-place division will be positioned to support the relieving unit's defense to include any MLRS elements in support of the counterbattery program. If possible, the relieved unit's artillery remains in place until all other units have been relieved. This may be critical in the event the enemy detects the relief early and tries to exploit the weakness of the defending division. Until the change of command, all artillery remains under the relieved commander's control. To facilitate the exchange, relieving units may initially occupy alternate and supplemental positions of in-place units and receive high-value, low-density Copperhead and FASCAM munitions for redistribution.

SECTION V - STABILITY OPERATIONS AND SUPPORT OPERATIONS

GENERAL

3-114. Stability operations apply military power and force presence to influence the political environment, facilitate diplomacy, and disrupt specified illegal activities. Stability operations may be undertaken to complement and reinforce offensive, defensive, or support operations or they may be the main effort. Stability operations are frequently characterized by rapid joint force contingency projections with detailed rules of engagement (ROE). The categories of stability operations are as follows:

- Peace operations.
- Foreign internal defense
- Security assistance.

- Humanitarian and civic assistance.
- Support to insurgencies.
- Support to counterdrug operations.
- Combating terrorism.
- Noncombatant evacuation.
- Arms control.
- Show of force.

3-115. Support operations provide essential supplies and services to assist designated groups. They are conducted mainly to relieve suffering and assist civil authorities to respond to crises. In most cases forces achieve success by overcoming conditions created by man-made or natural disasters. Support operations generally cover humanitarian assistance and environmental assistance.

3-116. Once troops are committed, doctrine stresses the overriding requirement to provide security for the force and population, when appropriate. The threat may be man, nature, or both; however, ROE are never a substitute for a commander's inherent responsibility to protect his force. Units and soldiers have the right (duty) to protect themselves even when initially deployed into a benign environment.

FA TACTICS AND TECHNIQUES IN SUPPORT OF STABILITY OPERATIONS AND SUPPORT OPERATIONS

3-117. Stability operations and support operations may encompass activities where corps arty and div arty elements may be employed in areas outside the US in support of US military operations in nontraditional noncombatant roles without primary weapons. FA firepower assets may be strictly limited if deployed at all. Disaster relief and humanitarian and security assistance are examples. The FA's communications infrastructure, coordination and liaison skills, and inherent mobility can be applied as part of a refocused FS effort to assist in a command's overall coordination and liaison effort. Potential responsibilities include enhancing effective C2, convoy operations, local security operations, and liaison in support of civil-military affairs. Friendly force protection using minimum essential force to neutralize an aggressor will be a primary concern. ROE must clearly specify when FA fires are appropriate and justified.

3-118. For operations involving actual combat or the threat of force in peacekeeping and peace enforcement operations, US forces may initially be committed in a deterrent posture but prepared to exert force when required. FA units must be prepared to transition to combat operations and deliver lethal and nonlethal fires carefully. Minimum preparations include those necessary for force protection and base defense for all-around security. In case of FA fires supporting offensive attacks and raids in stability operations, normal considerations apply with particular emphasis on using minimum required resources, preclusion of collateral damage, host nation coordination, and the political implications of the use of force. In defensive situations, FA fires are

used to the degree necessary to protect the force. In addition, there may be increased use of restrictive fire control measures to minimize potential damage to important cultural centers or dense population areas. Both restrictive and permissive FSCMs must be harmonized with the ROE. Close coordination with host country officials in the operational area is needed and communications with host country forces must be maintained.

3-119. In case of forced entry operations into non-permissive environments, ROE for FS/FA fires may be restrictive and limited to response in kind with focus on precision fires. Initial players may be AC-130H aircraft and CAS using precision munitions and AH-64 attack helicopters. FA and mortars may be used after the initial assault. The presence of FA assets in an airhead would probably be initially limited to one DS battalion per maneuver brigade, supported by an AN/TPQ-36 radar section.

3-120. Stability operations place a high priority on TA to protect the peacekeeping force and to assist in enforcing negotiated peace settlements. TA assets can be linked to shooters to silence hostile indirect fires or to HQ CPs to disseminate information on indirect fires among factions. Firefinder radars are key to detecting and neutralizing belligerent indirect fire assets. Protection of these radars and associated equipment becomes paramount.